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TARGET : STAGE - I

QUESTION BANK

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Young Scientist Exam

CHEMISTRY

CLASS : IX

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STUDY SMARTER NOT HARDER



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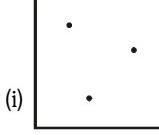
CHEMISTRY

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1. MATTER AND ITS COMPOSITION

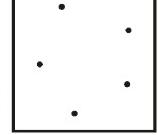
1. Which of the following is accompanied by cooling?
(1) vaporization (2) evaporation
(3) condensation (4) none of these
2. Intermolecular force of attraction is maximum in
(1) BEC state (2) Liquids
(3) Gases (4) Solids
3. Which of the following statements is not correct?
(1) Density of ice is less than the density of water
(2) To convert a temperature on the Kelvin scale to Celsius scale, subtract 273 from the given temperature
(3) To convert a temperature on the Celsius scale to Kelvin scale, add 273 to the given temperature.
(4) Vapourization of a liquid causes cooling
4. If temperature of any gas is increased its volume
(1) increases (2) decreases
(3) remains same (4) none of above
5. An ordered, repeating three dimensional arrangement of particles makes up a
(1) crystalline solid (2) amorphous solid
(3) can be both (1) and (2) (4) none of above
6. Escape of gas molecules from a small hole is called
(1) diffusion (2) effusion
(3) concentration (4) mobility
7. Which is the one property of a suspension that is different from that of a solution or a colloid?
(1) At the particles of a suspension will settle out
(2) The particles of a suspension reflect light
(3) A suspension is always clear
(4) Suspensions are colourless
8. Process in which vapour molecules are recaptured by molecules at liquid surface is called as
(1) evaporation (2) sublimation
(3) condensation (4) boiling
9. In air nitrogen gas acts as
(1) solute (2) solvent
(3) gaseous solute (4) aqueous solute
10. On increasing temperature of amorphous solid they
(1) melt at specific temperature
(2) soften gradually
(3) break at specific temperature
(4) boil at specific temperature
11. The amount of heat energy required to change 1 kg of solid into liquid at its melting point at atmospheric pressure is called as
(1) melting point (2) latent heat of fusion
(3) boiling point (4) latent heat of vaporization
12. Which of the following is correct about solid carbon dioxide?
(1) It is used in theatres to give special effects
(2) It is extremely cold substance
(3) It is used to keep freeze food and to keep ice cream cold
(4) All of them
13. Alum purifies water due to
(1) Adsorption (2) Peptisation
(3) Coagulation (4) Dialysis
14. The Zig-Zag random motion of colloidal particle in a dispersion medium is called as
(1) Brownian motion (2) Tyndal effect
(3) Electrophoresis (4) Electro-osmosis
15. On heating a liquid, its surface tension
(1) increases (2) decreases
(3) remains same (4) to reduced to zero
16. Solubility of Na_2SO_4
(1) increases with increase in temperature
(2) decreases with increase in temperature
(3) no effect on solubility with change in temperature
(4) none of above
17. Iodine and salt mixture can be separated through
(1) simple distillation (2) simple filtration
(3) sublimation (4) fractional distillation
18. In order to separate colors, dyes and amino acids, useful method will be
(1) crystallization (2) centrifugation
(3) filtration (4) chromatography
19. In amalgams solvent is
(1) gas (2) liquid
(3) solid (4) none of these
20. An example of a colloid which is an emulsion is
(1) Wipped cream (2) Mayonnaise
(3) Fog (4) Gelatin
21. Fractional distillation can
(1) not separate liquids whose boiling points are close
(2) separate liquids whose boiling point are close
(3) separate liquids whose boiling points are very high
(4) all of these

22. Material which can retain their strength above 550°C are known as
 (1) ceramics (2) refractories
 (3) metals (4) non-metals
23. Fog is a solution of
 (1) air in water vapours
 (2) air in air
 (3) vapours in vapours
 (4) water vapours in air
24. According to Lord Kelvin particles in a gas will stop moving and gas will have zero volume at temperature in ${}^{\circ}\text{C}$ is
 (1) -373 (2) -273 (3) -332 (4) -700
25. Carbon atoms are arranged in planar layers in
 (1) mercury (2) tin
 (3) graphite (4) diamond
26. Metallic lattice is surrounded by sea of
 (1) Protons (2) electrons
 (3) neutrons (4) all of above
27. Relative molecular mass of a substances can be found by using
 (1) relative spectrometer
 (2) mass spectrometer
 (3) weight spectrometer
 (4) radius spectrometer
28. When gas liquify, molecules lose kinetic energy and experience increase
 (1) volume (2) molecular weight
 (3) pressure (4) forces of attraction
29. Molecular solids needs very lower temperature to break weak
 (1) intermolecular forces
 (2) dipole-forces
 (3) hydrogen bonding
 (4) all of above
30. There are strong attractive forces between metal ions and delocalized electrons which gives
 (1) high tensile strength
 (2) hardness
 (3) color
 (4) both (1) and (2)
31. Commercially concentrated HCl is
 (1) 40% w/w (2) 50% w/w
 (3) 37% w/w (4) 80% w/w
32. Anhydrous agent, which is used to remove water from distillate ethanol may be
 (1) Iodine (2) Hydrocarbon
 (3) Calcium chloride (4) Naphthalene
33. When NaCl is dissolved in water, negative end of water molecules is attracted towards.
 (1) Cl (2) H (3) He (4) Na
34. The substance which gives colloidal solution in water is
 (1) sugar (2) soap
 (3) alum (4) plaster of paris
35. If a substance decomposes when heated to its boiling point, then suitable method to separate is
 (1) simple distillation (2) fractional distillation
 (3) vacuum distillation (4) crystallization
36. In chromatography, different pigments can be separated through
 (1) solubility differences
 (2) diffusion differences
 (3) attraction among particles
 (4) capillary action of chromatography paper
37. To separate components of liquid air, useful procedure is
 (1) centrifugation (2) separating funnel
 (3) fractional distillation (4) simple distillation
38. Rare freezing of sea water can be explained through
 (1) lowering freezing point of water
 (2) presence of impurities like salts
 (3) presence of breathing animals in it
 (4) elevation of boiling point
39. The process of making colloidal solution from the precipitate is called
 (1) coagulation (2) vulcanization
 (3) peptization (4) flocculation
40. The inter particle forces in solid hydrogen are
 (1) Hydrogen bonds (2) Covalent bonds
 (3) Coordinate bond (4) Vander-Waal's forces
41. For ultrafiltration, ordinary filter paper is impregnated in a solution of
 (1) Collodial (2) Starch
 (3) Gum (4) Silicic acid
42. In presence of crystals of solute a supersaturated solution is
 (1) not stable (2) stable
 (3) cannot be made (4) none of above

56. Which among the following statements is true?
- The rate of evaporation in a coastal area is less when compared to a non-coastal area.
 - The rate of evaporation in a non-coastal area is less when compared to a coastal area.
 - In both the areas the rate of evaporation is the same
 - None of the above
57. The order of vapour pressures of four solids is : P << R < Q < S. Which of the following has the maximum tendency to sublime?
- P
 - Q
 - R
 - S
58. Seema visited a Natural Gas Compressing Unit and found that the gas can be liquefied under specific conditions of temperature and pressure. While sharing her experience with friends she got confused. Help her to identify the correct set of conditions.
- Low temperature, low pressure
 - High temperature, low pressure
 - Low temperature, high pressure
 - High temperature, high pressure
59. If a gas is expanded at constant temperature
- the pressure increases
 - the kinetic energy of the molecules remains the same
 - the kinetic energy of the molecules decrease
 - the number of molecules of the gas increases
60. Artificial rain is based on the principle of
- Coagulation
 - Electro phoretic effect
 - Emulsification
 - Tyndal effect
61. The fluorescent tubes and neon sign bulbs glow because of
- presence of charged particles
 - high density of gases
 - high temperature
 - high applied voltage
62. Liquid drops assume spherical shape because
- A sphere has maximum surface area
 - A sphere has minimum surface area
 - Sphere is symmetrical in shape
 - None of these
63. Identify the methods by which the individual components of mixture containing water, potassium nitrate, sodium chloride, alcohol and carbon tetrachloride (CCl_4) can be separated by
- separating funnel, fractional distillation, fractional crystallization and distillation
 - fraction distillation, distillation and fractional crystallization
 - separating funnel, fractional distillation, filtration and distillation
 - separating funnel, fractional distillation, sedimentation and decantation
64. A chromatogram of pure samples of food colours X, Y and Z is given in the following illustration 1. Three samples of same food material A, B and C are analysed for purity, with the help of the chromatogram in illustration (2) Identify the impure sample.
- 

(i)

X Y Z



(ii)

A B C
- A
 - B
 - C
 - A and C

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10
A.	2	4	4	1	1	2	1	3	2	2
Q.	11	12	13	14	15	16	17	18	19	20
A.	2	4	3	1	2	2	3	2	3	2
Q.	21	22	23	24	25	26	27	28	29	30
A.	2	2		2	3	2	2	4	4	4
Q.	31	32	33	34	35	36	37	38	39	40
A.	3	3	4	2	3	1	3	1	3	4
Q.	41	42	43	44	45	46	47	48	49	50
A.	1	1	2	2	4	4	2	4	1	4
Q.	51	52	53	54	55	56	57	58	59	60
A.	4	3		1	2	1	4	3	2	1
Q.	61	62	63	64						
A.	1	2	1	3						

2. ELEMENT, MIXTURE & COMPOUND

23. What is formed when particles of two or more substance are distributed evenly among each other?
- A compound
 - Solubility
 - A solution
 - Element
24. How is a compound different from a mixture?
- Compound have two ore more components
 - Each substance in a compound loses its property
 - Compounds are and commonly found in nature
 - Solid, liquid, gases can form compound
25. During what type of reaction do the atoms of two or more elements joined together to form compound?
- Reaction and acid
 - Physical reaction
 - Chemical reaction
 - Chain reaction
26. When materials combines to form a mixture, they
- keep their original properties
 - react to form new substance with new properties
 - Combines in a specific ratio
 - Always change their physical state
27. How would a compound with pH of 9 be classified?
- organic
 - acidic
 - inorganic
 - basic
28. When iron filings and powdered sulphur are mixed together in a china dish?
- Heterogenous mixture results
 - Constituent present can easily be seen
 - Constituent can be separated by a magnet
 - All the above are correct
29. To prepare iron sulphide, by heating a mixture of iron filling and sulphur powder, we should use a
- copper dish
 - watch glass
 - china dish
 - petri dish
30. The reaction between iron and sulphur is accompanied by
- Evolution of light
 - absorption of heat
 - release of heat
 - both (1) and (3)
31. When magnet is rolled in the compound of iron sulphide then
- Iron particles are attracted towards the magnet
 - Iron sulphide dings to the magnet
 - Iron sulphide does not dings to the magnet
 - None of the above
32. In laboratory, what precaution has to be taken with CS_2 ?
- Kept away from flame
 - Kept away from carbon
 - Kept away from distilled water
 - Kept away from iron sulphide
33. A magnet is repeatedly moved closely over a mixture of iron powder and sulphur powder which of the following statement is false
- Iron powder is attracted towards magnet
 - Sulphur powder is left behind
 - Black FeS will be formed
 - Iron powder and sulphur powder are separated
34. Four student A, B, C and D added CS_2 to (i) A mixture of iron filing and sulphur and (ii) iron sulphide. They made the following observation
- Student A \rightarrow Iron dissolved in CS_2 in case (i) but iron sulphide did not dissolve in CS_2 (ii)
- Stdent B \rightarrow Iron sulphide dissolved in CS_2 whereas neither iron nor sulphur dissolved in the mixture
- Student C \rightarrow Sulphur dissolved in CS_2 form the mixture of iron and sulphur but iron sulphide did not dissolve
- Student D \rightarrow Sulphur, in the mixture of iron and sulphur, as well as iron sulphide were solution in CS_2
- The correct observation is that of student
- A
 - B
 - C
 - D
35. Sample (X) is a mixture of iron and sulphur. On separately heating sulphur in excess of air, (Y) is formed which of the following is true for (X) and (Y) respectively.
- Heterogeneous, Homogenous
 - Heterogeneous, Heterogeneous
 - Homogeneous, Heterogeneous
 - Homogeneous, Heterogeneous
36. The correct representation for the formation of iron sulphide from a reaction between iron and sulphur on heating is
- $2\text{Fe} + \text{S} \xrightarrow{\Delta} \text{Fe}_2\text{S}$
 - $2\text{Fe} + 2\text{S} \xrightarrow{\Delta} \text{Fe}_2\text{S}_2$
 - $2\text{Fe} + 3\text{S} \xrightarrow{\Delta} \text{Fe}_2\text{S}_3$
 - $8\text{Fe} + \text{S}_8 \xrightarrow{\Delta} 8\text{FeS}$
37. Sucrose is another name for table sugar is a compound made from the elements carbon, hydrogen and oxygen. Which statement best describes properties of sucrose?
- They are exactly like properties of carbon
 - They are exactly like properties of oxygen
 - They are exactly like properties of hydrogen
 - They are different from the properties of element in sucrose.

38. Which of the following is a way in which elements and compounds are similar?
- Element and compounds are both pure substance
 - Element and compounds are both listed on periodic table
 - Element and compounds are both made up of different atoms
 - Element and compounds can both be broken down by physical change
39. The diagram below shows a magnet near a pile of particle of iron and sulphur. The magnet attracts the iron separating it from the mixture. Based on the diagram, which statement is true?



- The parts of a mixture keeps their own properties
- The elements in a compound keep their own properties
- The properties of a mixture are different from properties of its elements
- The properties of a compound are different from properties of its elements.

40. Which compounds are not found in nature?
- Carbohydrates
 - Protein
 - CO_2
 - None of these
41. If a drink container tells you to "SHAKE WELL" before drinking, the mixture in the container is most likely a
- Solution
 - Suspension
 - Colloid
 - Alloy
42. Concentration means
- How well two substance mix with each other
 - The ability of one substance to dissolve in another
 - The extent to which a compound chemically contries
 - The amount of a particular substance in a given mixture.
44. What is not a way to make solid substance dissolve faster?
- Lowering the temperature of the solvent
 - Stirring the substance
 - Crushing the substance
 - Heating the substance

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10	
A.	1	4	2	1	3	1	3	2	1	4	
Q.	11	12	13	14	15	16	17	18	19	20	
A.	2	1	1	2	2	4	3	2	4	2	
Q.	21	22	23	24	25	26	27	28	29	30	
A.	3	2	3	2	3	1	4	4	3	3	
Q.	31	32	33	34	35	36	37	38	39	40	
A.	3	1	3	3	1	4	4	1	1	4	
Q.	41	42	43								
A.	2	4	1								

3. ATOMIC STRUCTURE

1. Which one of the following statement is not true?
- Most of the space in an atom is empty
 - The total number of neutrons and protons is always equal in a neutral atom
 - The total number of electrons and protons in an atom is always equal.
 - The total number of electrons in any energy level can be calculated by the formula $2n^2$.
2. Which of the following element contains only two electrons in the outermost shell?
- Helium
 - Beryllium
 - Magnesium
 - All of these
3. An atom with 3 protons and 3 neutrons will have a valency of -
- 3
 - 7
 - 1
 - 4
4. The number of electrons in an element X is 15 and the number of neutrons is 16. Which of the following is the correct representation of the element?
- $^{31}_{15}X$
 - $^{31}_{16}X$
 - $^{16}_{15}X$
 - $^{15}_{16}X$
5. The isotopes of an element have
- same number of neutrons
 - same atomic number
 - same mass number
 - None of these
6. Select the pair of Isobars from the following species
- $^{37}_{17}A$, $^{30}_{17}B$, $^{37}_{18}C$, $^{36}_{18}D$, $^{38}_{19}E$
- A and B
 - A and C
 - C and E
 - C and D
7. Rutherford's α -scattering experiment showed that
- Electrons have negative charge
 - The mass and positive charge of the atom is concentrated in the nucleus.
 - Neutron exist in the nucleus
 - Most of the space in atom is empty
- (i) and (iii)
 - (ii) and (iv)
 - (i) and (iv)
 - (iii) and (iv)
8. The ion of an element has 3 positive charges. Mass number of the atom is 27 and the number of neutrons is 14. What is the number of electrons in the ion.
- 13
 - 10
 - 14
 - 16
9. Who am I? My atomic number is 20.
- A metal of valency 2
 - A gas of valency 2
 - A solid non-metal of valency 2
 - A non-metal of valency 4
10. Which of the following mostly accounts for the mass of an atom?
- Neutrons
 - Neutron and proton
 - Electron and proton
 - Electron and neutron
11. Within an atom, the nucleus when compared to the extra nuclear part is -
- Bigger in volume and heavier in mass
 - Smaller in volume but heavier in mass
 - Smaller in volume and lighter in mass
 - Same size
12. The proton is heavier than an electron by -
- 287 times
 - 1837 times
 - 5837 times
 - 2827 times
13. The mass number of an element is 27. If it has 14 neutrons then valence shell of this element is -
- K
 - L
 - M
 - N
14. The mass of the neutron is of the order of -
- 10^{-23} kg
 - 10^{-24} kg
 - 10^{-16} kg
 - 10^{-27} kg
15. Mg^{+2} ion is isoelectronic with
- Li^+
 - Ca^{+2}
 - Na^+
 - Ba^{+2}
16. What would be charge on the atom having 20 protons and 18 electrons?
- 1
 - 3
 - 2
 - 4
17. Which of the following is Isobar?
- $^{235}_{92}U$, $^{238}_{92}U$
 - 3_1H , 3_2He
 - $^{16}_8X$, $^{18}_8X$
 - $^{14}_6C$, $^{13}_6C$
18. Which of the following isotope is used in carbon dating method?
- $^{12}C_6$
 - $^{13}C_6$
 - $^{14}C_6$
 - $^{16}O_8$
19. e/m ratio in anode rays -
- is constant
 - depends upon the nature of gas
 - depends upon the nature of electron
 - None of these
20. 'Atom is divisible'. This fact was proved by _____.
- Henry Becquerel
 - Ernest Rutherford
 - Neils Bohr
 - William Chadwick
21. In an atom, when electron enters from outer shell to inner shell, then energy is
- absorbed
 - evolved
 - not changed
 - can't say anything

22. Which of the following do not have the same number of valence electrons?
(1) H, Li, Na, K (2) He, Mg, Be, Ca
(3) B, Al, N, P (4) O, S, Se
23. Which one of the following will not show deflection of the path on passing through an electric field?
(1) Proton (2) Cathode rays
(3) Electron (4) Gamma rays
24. Rutherford's experiment which established the nuclear model of an atom used a beam of -
(1) β -particles which impinged on the metal foil and got absorbed
(2) γ -rays which impinged on a metal foil and rejected electrons
(3) Hydrogen atoms, which impinged on a metal foil and got scattered
(4) α -particle nuclei, which impinged on a metal foil and got scattered
25. One isotope of carbon with atomic mass 12 occupies group 14 in the 2nd period in the long form periodic table. Predict the position of another radioactive isotope of carbon with atomic mass 14 ?
(1) Group 14, 3rd period
(2) Group 13, 2nd period
(3) Group 14, 2nd period
(4) Group 14, 4th period
26. Two particles X and Y have the composition as shown in the table. The particles X and Y are
- | Particle | No. of electrons | No of neutrons | No. of protons |
|----------|------------------|----------------|----------------|
| X | 10 | 8 | 8 |
| Y | 18 | 18 | 17 |
- (1) Metal atoms (2) Metalloid atoms
(3) Negative ions (4) Positive ions
27. In which of the following pairs, the ions are iso-electronic ?
(1) Na^+ , Ne (2) $\text{Al}^{+3}, \text{O}^-$
(3) Na^+ , O^{-1} (4) N^{-3} , Cl^-
28. Which of the following are isotones?
(1) ${}_{\text{6}}^{14}\text{C}$, ${}_{\text{7}}^{15}\text{N}$ (2) ${}_{\text{8}}^{16}\text{O}$, ${}_{\text{8}}^{18}\text{O}$
(3) ${}_{\text{1}}^{3}\text{H}$, ${}_{\text{2}}^{3}\text{He}$ (4) ${}_{\text{19}}^{40}\text{K}$, ${}_{\text{20}}^{40}\text{Ca}$
29. The average atomic mass of a sample of an element X is 16.24. What are the percentages of isotopes ${}_{\text{8}}^{16}\text{X}$ and ${}_{\text{8}}^{18}\text{X}$ in sample?
(1) 40%, 60% (2) 90%, 10%
(3) 64%, 34% (4) 70%, 30%
30. The e/m ratio of hydrogen to Helium is
(1) 1:1 (2) 2:1 (3) 1:2 (4) 1:4
31. Rutherford selected a gold foil in his α -ray scattering experiment. Why?
(1) gold foil has high malleability
(2) gold foil has hardness
(3) gold foil has high penetration power
(4) none of these
32. In a sample of ethyl ethanoate ($\text{CH}_3\text{COOC}_2\text{H}_5$) the two oxygen atoms have the same number of electrons but different number of neutrons. Which of the following is the correct reason for it?
(1) One of the oxygen atoms has gained electrons
(2) One of the oxygen atoms has gained two neutrons
(3) The two oxygen atoms are isotopes
(4) The two oxygen atoms are isobars
33. An element X which has seven electrons in its outermost shell X is liquid at room temperature. Identify 'X'.
(1) Bromine (2) Mercury
(3) both (1) and (2) (4) None of these
34. If bromine atoms is available in the form of two isotopes ${}_{\text{35}}^{79}\text{Br}$ (49.7%) and ${}_{\text{35}}^{81}\text{Br}$ (50.3%). What is the average atomic mass of Bromine atom ?
(1) 16.42u (2) 80.006u
(3) 50.12u (4) 50.3u
35. Which isotope is generally used as a nuclear fuel?
(1) Thorium (2) Uranium-235
(3) Cobalt-60 (4) None of these
36. What is the required pressure inside the discharge tube to obtain cathode rays?
(1) 0.01mm (2) 0.1mm
(3) 0.001mm (4) 1mm
37. Line segment: Point : : Substance: _____.
(1) Atom (2) Particle
(3) molecule (4) nothing
38. $\frac{\text{Mass of Neutron}}{\text{Mass of Electron}} \times 'X'$. Then approximate value of X is -
(1) 2000 (2) 1500
(3) 1800 (4) 1600
39. Which one of the following used for differentiating cancerous tissues from the normal tissue?
(1) ${}_{\text{53}}^{131}\text{I}$ (2) ${}_{\text{11}}^{24}\text{Na}$ (3) ${}_{\text{11}}^{23}\text{Na}$ (4) ${}_{\text{15}}^{82}\text{P}$
40. Which has highest e/m ratio?
(1) He^{+2} (2) H^+
(3) He^+ (4) D^+

41. The increasing order for the values of e/m is
 (1) e, p, n, α (2) n, p, e, α
 (3) n, p, α, e (4) n, d, p, e
42. The fixed circular paths around the nucleus are called _____.
 (1) orbits (2) orbitals
 (3) nucleons (4) mesons
43. The absolute charge of an electron is -
 (1) $-1.6 \times 10^{-19} C$ (2) $+1.6 \times 10^{-19} C$
 (3) $1.6 \times 10^{-19} C$ (4) $16 \times 10^{-19} C$
44. An electric field deflects beams of
 (1) Protons (2) Electrons
 (3) Neutrons (4) Both (1) and (2)
45. Which of the following statement is wrong about electron ?
 (1) It is a particle
 (2) It has wave like property
 (3) Its motion is affected by magnetic field
 (4) It emits energy while moving in orbit
46. Most penetrating radiation of radioactive element is
 (1) α - rays (2) x - rays
 (3) β - rays (4) γ - rays
47. The heaviest particle among all the four given particles is -
 (1) Meson (2) Electron
 (3) Neutron (4) Proton
48. Alpha particles are fast moving -
 (1) Protons (2) Helium nuclei
 (3) Electron (4) H-atoms
49. When the electrons is brought from infinity to the ground state of the hydrogen atom, then energy is
 (1) Absorbed (2) Not affected
 (3) Emitted (4) Depends on surrounding
50. Which of the following conclusions could not be derived from Rutherford's α -scattering experiment ?
 (1) Most of the space in the atom is empty
 (2) The radius of the atom is about $10^{-10} m$ while that of nucleus is $10^{-15} m$
 (3) Electrons move in a circular path of fixed energy called orbits.
 (4) Electrons and the nucleus are held together by electrostatics forces.
51. The nitrogen atom has 7 electrons, the nitride ion (N^{3-}) will have -
 (1) 7 protons and 10 electrons
 (2) 4 protons and 7 electrons
 (3) 4 protons and 10 electrons
 (4) 10 protons and 7 electrons
52. Which property of elements is not a whole number?
 (1) Mass number
 (2) Atomic number
 (3) Average atomic mass
 (4) None of these
53. The space between the proton and electron in hydrogen atom is -
 (1) filled with air
 (2) empty
 (3) filled with magnetic radiation
 (4) none of the these
54. Atoms consists of electrons, protons and neutrons. If the mass attributed to neutron was halved and that attributed to the electrons was doubled, the atomic mass of $^{12}C_6$ would be approximately -
 (1) Same (2) doubled
 (3) halved (4) reduced by 25%
55. The species that has same number of electrons as $^{16}S^{32}$ is -
 (1) $^{16}S^+$ (2) $^{17}Cl^-$ (3) $^{16}S^-$ (4) $^{17}Cl^+$

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10	
A.	2	4	3	1	2	2	2	2	1	2	
Q.	11	12	13	14	15	16	17	18	19	20	
A.	2	2	3	4	3	3	2	3	2	2	
Q.	21	22	23	24	25	26	27	28	29	30	
A.	2	3	4	4	3	3	1	1	2	2	
Q.	31	32	33	34	35	36	37	38	39	40	
A.	1	1	1	2	2	3	1	3	2	2	
Q.	41	42	43	44	45	46	47	48	49	50	
A.	4	1	1	4	4	4	3	2	3	3	
Q.	51	52	53	54	55						
A.	1	3	2	4	4						

4. MEASUREMENT OF MATTER

1. _____ formulated the law of constant proportion.

(1) Proust (2) Newton (HBBV, 2014)
(3) Lavoisier (4) Mosley

2. 1.825 g of HCl in 500 ml of water will make _____.
(HBBV, 2014)

(1) 0.1 M HCl (2) 0.05 M HCl
(3) 1 M HCl (4) 0.5M HCl

3. Which of the following pair of elements represent a mole ratio of 1 : 1 ?
(HBBV, 2014)

(1) 10 g of Calcium and 12 g of Magnesium
(2) 12 g of Magnesium and 6 g of Carbon
(3) 12 g of Carbon and 20 g of Calcium
(4) 20 g of Sodium and 20. g of Calcium

4. Calculate the number of atoms in 5 g of Hydrogen.
(HBBV, 2013)

(1) 3.011×10^{24} (2) 1.505×10^{24} atoms
(3) 1.25×10^{23} atoms (4) 7.5275×10^{23} atoms

5. Number of molecules present in 1 mole of Hydrogen and 1 mole of Oxygen are respectively _____.
(1) 6.023×10^{23} and 6.023×10^{23} (HBBV, 2013)
(2) 6.023×10^{19} and 6.023×10^{23}
(3) 6.023×10^{24} and 6.023×10^{16}
(4) 6.023×10^{22} and 6.023×10^{23}

6. Mass of one Nitrogen atom is _____.
(HBBV, 2012)

(1) 6.022×10^{23} kg (2) 6.022×10^{-23} kg
(3) 2.325×10^{-23} kg (4) 2.325×10^{-26} kg

7. Number of moles in 500 mg of CO_2 is _____.
(HBBV, 2012)

(Atomic mass of C = 12, Molecular mass of O_2 = 32)

(1) 1.1364×10^{-2} mol (2) 6.022×10^{23} mol
(3) 44 mol (4) 1.364×10^2 mol

8. For a compound, relative proportion by atomic mass of Iodine and Oxygen, was found to be 254 : 80. What is the molecular formula of the compound?
(Atomic mass of Iodine is 127 and that of Oxygen is 16)

(1) I_2O_5 (2) I_5O_2 (HBBV, 2011)
(3) I_4O_2 (4) O_2I_5

ANSWER KEY

Q.	1	2	3	4	5	6	7	8
A.	1	1	2	1	1	4	1	1

5. CHEMICAL REACTION

22. A student performed the following displacement reaction:
- $$\text{Fe(s)} + \text{CuSO}_4\text{(aq)} \rightarrow \text{FeSO}_4\text{(aq)} + \text{Cu(s)}$$
- $$\text{Zn(s)} + \text{FeSO}_4\text{(aq)} \rightarrow \text{ZnSO}_4\text{(aq)} + \text{Fe(s)}$$
- $$2\text{Al(s)} + 3\text{ZnSO}_4\text{(aq)} \rightarrow \text{Al}_2(\text{SO}_4)_3\text{(aq)} + 3\text{Zn(s)}$$
- Arrange Fe, Zn, Al and Cu in the decreasing order of reactivity on the basis of above reaction are
- (1) Al > Zn > Fe > Cu (2) Fe > Cu > Zn > Al
(3) Zn > Cu > Fe > Al (4) Al > Zn > Cu > Fe
23. The following is used for the preparation of oxygen gas in the laboratory
- $$2\text{KClO}_3\text{(s)} \xrightarrow[\text{Catalyst}]{\text{Heats}} 2\text{KCl(s)} + 3\text{O}_2\text{(g)}$$
- Which of the following statement are correct?
- (1) It is decomposition and endothermic in nature
(2) It is a combination reaction
(3) It is a decomposition reaction and accompanied by release of heat.
(4) it is a photochemical decomposition and exothermic in nature
24. Which of the following are exothermic processes?
- (a) Reaction of water with quick lime
(b) Dilution of an acid
(c) Evaporation of water
(d) Sublimation of camphor
(1) a, b (2) b, c (3) a, d (4) c, d
25. When a black and white photographic film is exposed to light the grey colour on the photographic film is due to presence of
- (1) Ag_2O (2) Ag (3) Br_2 (4) all of these
26. Which of the statements about the reaction are incorrect?
- $$2\text{PbO(s)} + \text{C(s)} \rightarrow 2\text{Pb(g)} + \text{CO}_2\text{(g)}$$
- (a) Lead is getting reduced
(b) CO_2 is getting oxidised
(c) Carbon is getting oxidised
(d) Lead oxide is getting reduced
(1) a and b (2) a and c
(3) a, b and c (4) all
27. Aluminium powder was added to a solution of CuSO_4 . The colour of the solution changed from
- (1) Colourless to blue
(2) Blue to colourless
(3) Light green to blue
(4) Reddish brown to light green
28. Copper container can be used to store
- (1) $\text{Al}_2(\text{SO}_4)_3$ solution (2) ZnSO_4 solution
(3) FeSO_4 solution (4) All the three

29. $\text{CH}_2 = \text{CH}_2 + \text{Br}_2 \xrightarrow{\Delta} \text{CH}_2\text{Br} - \text{CH}_2\text{Br}$ choose the correct option
- (1) Addition reaction
(2) Product is 1, 2 dibromoethane
(3) Combination reaction
(4) Decomposition
30. $\text{CH}_4 + \text{Cl}_2 \xrightarrow{\text{u.v.rays}} \text{CH}_3\text{Cl} + \text{HCl}$
- (1) Addition reaction (2) Decomposition reaction
(3) Substitution reaction (4) Displacement reaction
31. $(\text{CaSO}_4)_2 \cdot \text{H}_2\text{O}$ is formula of
- (1) Plaster of Paris (2) Gypsum
(3) Cement (4) Glass
32. $\text{Cu} + \text{HNO}_3 \rightarrow \text{Cu}(\text{NO}_3)_2 + \text{YNO} + \text{XH}_2\text{O}$ the value of X and Y are
- (1) 3 and 1 respectively
(2) 8 and 6 respectively
(3) 4 and 2 respectively
(4) 7 and 1 respectively
33. The conversion of $\text{K}_2\text{Cr}_2\text{O}_7$ into $\text{Cr}_2(\text{SO}_4)_3$ is process
- (1) Oxidation (2) Reduction
(3) Decomposition (4) Substitution
34. An element which never has a positive oxidation state in any of its compound is
- (1) Boron (2) Oxygen
(3) Chlorine (4) Fluorine
35. The following reaction is an example of a
- $$4\text{NH}_3\text{(g)} + 5\text{O}_2\text{(g)} \rightarrow 4\text{NO(g)} + 6\text{H}_2\text{O}$$
- (a) Displacement (b) Combination
(c) Redox (d) Neutralisation
(1) a and d (2) b and c
(3) only c (4) only d
36. Which of the following statement about the given reaction is correct?
- $$3\text{Fe(s)} + 4\text{H}_2\text{O(g)} \rightarrow \text{Fe}_3\text{O}_4\text{(s)} + 4\text{H}_2\text{(g)}$$
- (a) Iron metal is getting oxidised
(b) Water is getting reduced
(c) Water is acting as reducing agent
(d) Water is acting as oxidising agent
(1) a, b and d (2) c and d
(3) a, b and c (4) b and d
37. The metal which inhibits the catalytic action of an enzyme is
- (1) Arsenic (2) Mercury
(3) Both 1 and 2 (4) Neither 1 & 2

38. In the reaction given below a, b, c and d are



- (1) 8, 10, 12, 2 (2) 2, 13, 8, 10
 (3) 2, 8, 12, 10 (4) 10, 2, 8, 12

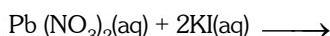
39. Green coating on copper in rainy season is due to

- (1) $CuCO_3$ (2) $Cu(OH)_2$
 (3) $CuCO_3 \cdot Cu(OH)_2$ (4) CuS

40. Two beaters A and B contain Iron (II) Sulphate solution. In the beaker A, a small piece of copper is placed and in the beaker B, a small piece of zinc is placed. It is found that a grey deposit forms on the zinc but not on the copper. It can be concluded that

- (1) Zinc is most reactive metal followed by Fe and Cu
 (2) Zinc is most reactive metal followed by Cu and Fe
 (3) Iron is most reactive metal followed by Zn and Cu
 (4) Iron is most reactive metal followed by Cu and Zn

41. Product of reaction is



- (1) $PbI_2(aq) + KNO_3(s) \downarrow$
 (2) $PbI_2(s) \downarrow + 2KNO_3(aq)$
 (3) $2PbI_2(s) \downarrow + KNO_3(aq)$
 (4) $PbI_2(s) \downarrow + KNO_3(aq) \downarrow$

42. A dilute $FeSO_4$ solution was gradually added to the beaker containing acidified permanganate solution. The light purple colour of the solution fades and finally disappears which of the following is the correct

- (1) $KMnO_4$ is an oxidising agent, it oxidises $FeSO_4$
 (2) $FeSO_4$ acts as an oxidising agent and oxidises $KMnO_4$
 (3) The colour disappears due to dilution
 (4) $KMnO_4$ is an unstable compound and decomposes in presence of $FeSO_4$ is a colourless compound.

43. Solid CaO reacts vigorously with water to form $Ca(OH)_2$

accompanied by liberation of heat. This process is called slaking of lime. $Ca(OH)_2$ dissolves in water to form its solution called lime water. Which among the following are about slaking of lime and the solution formed

- (a) Endothermic reaction
 (b) Exothermic reaction
 (c) The pH of the resulting solution will be more than 7
 (d) The pH of the resulting solution will be less than 7
 (1) a and b (2) b and c
 (3) a and d (4) c and d

44. When magnesium ribbon is burnt in air and the ash is collected in a China dish. It contains

- (1) Magnesium oxide only
 (2) Magnesium nitride only
 (3) both magnesium oxide and magnesium nitride
 (4) Magnesium oxide and magnesium carbide

45. Magnesium ribbon is rubbed with sand paper before making it to burn. The reason of rubbing the ribbon

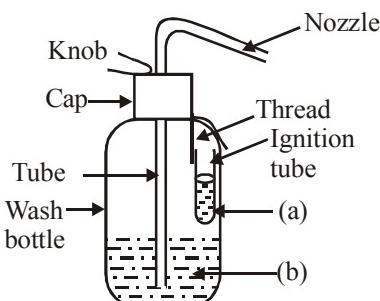
- (1) Remove moisture condensed over the surface of ribbon
 (2) Generate heat due to exothermic
 (3) Remove MgO formed over the surface of magnesium
 (4) Mix silicon from sand paper (SiO_2) with magnesium for lowering ignition temperature of the ribbon

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10
A.	4	2	3	2	1	4	4	2	3	2
Q.	11	12	13	14	15	16	17	18	19	20
A.	4	4	4	4	3	2	3	1	1	1
Q.	21	22	23	24	25	26	27	28	29	30
A.	2	1	1	1	2	1	2	4	1	3
Q.	31	32	33	34	35	36	37	38	39	40
A.	1	3	2	4	3	1	2	2	3	1
Q.	41	42	43	44	45					
A.	2	1	2	3	3					

6. ACIDS BASES AND SALTS

1. Which is not a neutralization reaction?
- Baking soda and hydrochloric acid
 - Ammonium hydroxide and Ethanoic acid
 - Zinc oxide and Phosphoric acid
 - None of these
2. Acidic gas is
- CO
 - CO_2
 - NH_3
 - N_2O
3. Base used during gastrointestinal malfunctioning
- NH_4OH
 - $\text{Ca}(\text{OH})_2$
 - $\text{Mg}(\text{OH})_2$
 - NaOH
4. Ant sting contains
- Acetic acid
 - Boric acid
 - formic acid
 - Tartaric acid
5. Milk is
- Slightly acidic
 - Neither acidic nor basic
 - Highly basic
 - Slightly basic
6. If concentration of H^+ ion is 10^{-11} , which of the following statements would be right
- pOH would be high
 - H^+ ion concentration increases
 - pH decreases
 - OH^- ion increases
7. The formula for potash alum is
- $\text{KSO}_4 \cdot \text{Al}_2(\text{SO}_4)_3 \cdot 24\text{H}_2\text{O}$
 - $\text{CaCO}_3 \cdot \text{MgCO}_3 \cdot 12\text{H}_2\text{O}$
 - $\text{K}_2\text{SO}_4 \cdot \text{Al}_2(\text{SO}_4)_3 \cdot 24\text{H}_2\text{O}$
 - $\text{K}_2\text{SO}_4 \cdot \text{Al}_2\text{SO}_4 \cdot \text{H}_2\text{O}$
8. The nature of the salt $\text{CH}_3\text{COONH}_4$ is
- Acidic
 - Neutral
 - Basic
 - None of the above
9. The acid base concept of H^+ and OH^- was given by
- Bronsted Lowry
 - Arrhenius
 - Lewis
 - None of the above
10. The nature of CuSO_4 is
- Acidic
 - Basic
 - Neutral
 - Cannot be determined
11. Which of the following is a pale blue base?
- $\text{Al}(\text{OH})_3$
 - $\text{Fe}(\text{OH})_2$
 - $\text{Ca}(\text{OH})_2$
 - $\text{Cu}(\text{OH})_2$
12. The nature of $(\text{NH}_4)_2\text{SO}_4$ is
- Acidic
 - Basic
 - Neutral
 - Cannot be determined
13. What color is shown by universal indicator, when pH is neutral?
- Blue
 - Red
 - Green
 - Yellow
14. To 50ml of concentrated HCl acid, 10ml of distilled water is added
- The pH would rise
 - The pH would fall
 - Dilution would cause neutralizing the pH
 - The pH would remain unaltered
15. An indicator is added to a solution and the solution turns yellow. If the same indicator is added to another type of solution, the color changes to red. The indicator is
- Litmus
 - Phenolphthalein
 - Methyl orange
 - Purple cabbage
16. This salt is insoluble in water
- Copper carbonate
 - Potassium carbonate
 - Sodium carbonate
 - Ammonium carbonate
17. A concentrated acid X is stored in a glass bottle. A few days after its poured, it is observed that the inner glass color changes to reddish brown. The acid is
- HCl
 - H_2SO_4
 - HNO_3
 - H_2CO_3
18. Amongst the four pH given below, which has the highest pOH value
- 4.2
 - 5
 - 2
 - 1.9
19. White colored crystal of this compound is available in the market. It is completely soluble in water and is highly basic in nature. The process by which it is separated is Slovary's process.
- KCl
 - NaCl
 - NaOH
 - ZnCl_2
20. The diagram below represents acid soda fire extinguisher. A and B would most likely be



- Hydrochloric acid and sodium hydrogen carbonate
- Dilute sulphuric acid and sodium hydrogen carbonate
- Hydrochloric acid and sodium bicarbonate
- Dilute sulphuric acid and sodium carbonate

31. The salt whose aqueous solution will have no effect on either red litmus or blue litmus is
(1) Potassium sulphate
(2) Sodium carbonate
(3) Ammonium sulphate
(4) Sodium acetate

32. Reaction between aqueous solution of hydrochloric acid and Ammonia would lead to the formation of
(1) Ammonium Hydroxide
(2) No effect
(3) Formation of chlorine gas
(4) Formation of ammonium chloride

33. Rusted iron can be made rust free in the laboratory by simply dipping it in
(1) Sodium Hydroxide (2) Sulphuric acid
(3) Hydrochloric acid (4) Ferric Chloride

34. Soap Solution is basic, it is formed due to
(1) Fatty acid reaction with $\text{Ca}(\text{OH})_2$
(2) Fatty acid reaction with KOH
(3) Fatty acid reaction with NH_4OH
(4) Fatty acid reaction with H_2SO_3

35. With observing the table below, which would be the best answer in the statement

<u>Matter</u>	<u>Solubility at 20° C</u>
NaCl - Water	36g
KCl - Water	34g
KNO_3 -Water	31.6g

(1) Salts of sodium and potassium are equisoluble
(2) Dissociation of KCl is more than NaCl
(3) Salts of same metal are less soluble if non-metallic radicals change
(4) KNO_3 is acidic

36. Neutralization reaction is governed by
(1) Titration reactions (2) Solubility index
(3) Qualitative analysis (4) None of these

37. 10 mol of a solution of NaOH is found to be completely neutralized by 8ml of a given solution of HCl, if 20 ml of the same solution of NaOH is taken, the amount of HCl required to neutralize it will be
(1) 4ml (2) 8ml
(3) 12ml (4) 16ml

38. The indicator that turns red in acidic solution is
(1) Turmeric and litmus
(2) Phenolphthalein and methyl orange
(3) Litmus and methyl orange
(4) Phenolphthalein and methyl orange

ANSWER KEY

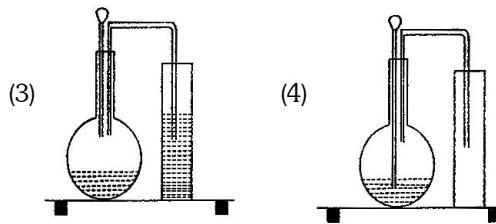
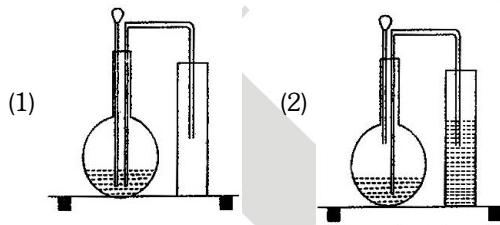
Q.	1	2	3	4	5	6	7	8	9	10
A.	4	2	3	3	1	4	3	2	2	1
Q.	11	12	13	14	15	16	17	18	19	20
A.	4	1	3	1	3	1	2	4	3	2
Q.	21	22	23	24	25	26	27	28	29	30
A.	2	1	2	2	1	4	4	2	4	2
Q.	31	32	33	34	35	36	37	38	39	40
A.	1	4	3	2	3	1	4	3	3	4
Q.	41	42	43	44	45	46	47	48	49	50
A.	3	2	3	2	2	2	2	2	3	3

7. METALS AND NON-METALS

1. Out of 4 elements Cu, Fe, Zn and S most reactive is
 $\text{CuSO}_4 + \text{Fe} \rightarrow \text{FeSO}_4 + \text{Cu}$
 $\text{FeSO}_4 + \text{Zn} \rightarrow \text{ZnSO}_4 + \text{Fe}$
(1) Zn (2) Fe (3) Cu (4) S
2. One of the minerals of E is E_2O_3 then formula for its sulphate is _____.
(1) $\text{E}_2(\text{SO}_4)_2$ (2) $\text{E}_2(\text{SO}_4)_3$
(3) $\text{E}_3(\text{SO}_4)_2$ (4) None of these
3. One of the oxide of E is E_2O_3 The formula for its chlorides is ECl_3 & ECl_5 . Formula for its Sulphide is
(1) E_2S_3 , E_2S_5 (2) E_3S_3 , E_3S_5
(3) ES_3 , ES_5 (4) None of these
4. Sulphide of a metal as formula M_2S_3 find formula for its sulphate.
(1) $\text{M}_2(\text{SO}_4)_2$ (2) $\text{M}_2(\text{SO}_4)_3$
(3) $\text{M}_3(\text{SO})_2$ (4) None of these
5. Phosphate of a metal shows formula $\text{M}_3(\text{PO}_4)_2$ Find formula for its silicate
(1) MSiO_3 (2) M_2SiO_3
(3) $\text{M}_2(\text{SiO}_3)_3$ (4) None of these
6. Phosphate of a metal shows formula M_1PO_4 Find formula for its hypochlorite.
(1) MOCl (2) M_2OCl
(3) $\text{M}(\text{OCl})_2$ (4) None of these
7. A metal M combines with Oxygen to form oxide. This oxide combines with water vapour and CO_2 to form basic carbonate M is used to prevent corrosion of iron. So find the metal M.
(1) Fe (2) Tin (3) Zinc (4) All
8. In the refining of metals by electrolytic process _____ is used as cathode and _____ is used as anode
(1) Pure metal, Impure metal
(2) Impure metal, Pure metal
(3) Graphite & iron
(4) Iron & graphite
9. If sulphur is heated at 1700°C it becomes _____.
(1) brown liquid. (2) Black tar like substance
(3) Orange vapour (4) Yellow liquid
10. The metal which can replace calcium from its salt is
(1) Al (2) Ba (3) Fe (4) K
11. The most reactive of the following metals is
(1) Ca (2) Al (3) N (4) Pb
12. Which of the following elements is highly resistant to corrosion?
(1) Iron (2) Nickel (3) Silver (4) Titanium
13. Metal which is the best conductor of electricity
(1) Nickel (2) Silver (3) Gold (4) Sodium
14. The non-metal which is hard is
(1) Sulphur (2) Chlorine
(3) Graphite (4) Diamond
15. Which one of the following is used to preserve food stuff?
(1) Nitrogen (2) Phosphorus
(3) Carbon (4) None
16. A metal which is liquid at room temperature is
(1) Ga (2) Na (3) K (4) Al
17. Which of the following is a property of non-metals?
(1) Low densities
(2) Non-malleable and non-ductile
(3) Poor conductor of electricity
(4) All the three.
18. An element which is a metalloid
(1) Antimony (2) Gold
(3) Arsenic (4) Both 1 and 3
19. Helium has electrons in their valence shell.
(1) 3 (2) 2 (3) 6 (4) 8
20. Metal which is present in native state is
(1) S (2) Ce (3) Cu (4) Gold
21. Non-metal reacts with hydrogen to form _____.
(1) Covalent compounds
(2) Ionic compounds
(3) Electrovalent compounds
(4) Co-ordinate compounds
22. The electrode used in electrolysis is made of
(1) Phosphorus (2) Graphite
(3) Zinc (4) Silicon
23. Aluminium foil is used as a medicine wrapper because
(1) It is cost effective (2) It is malleable
(3) It is shiny (4) It is ductile
24. Which of the following elements undergoes rusting ?
(1) Iron (2) Nickel (3) Silver (4) Titanium
25. Amphoteric oxide is
(1) Na_2O (2) MgO (3) ZnO (4) CaO
26. Which of the following burns with an explosion in contact with water?
(1) Na (2) Ca (3) Mg (4) Zn
27. Most malleable metal is _____.
(1) Mg (2) Au (3) Fe (4) Cu
28. The law of triads is applicable to _____.
(1) C, N, O (2) H, O, N
(3) Na, K, Rb (4) Cl, Br, I
29. Silver article turns black if used in chemistry lab due to formation of
(1) Silver nitrate (2) Silver sulphide
(3) Silver oxide (4) Silver chloride

30. A non-metal which is a good conductor of electricity is _____.
(1) Phosphorous (2) Diamond
(3) Graphite (4) Sulphur
31. 22 – carat gold is a mixture of
(1) Cu and Au (2) Zn and Au
(3) Al and Au (4) Mg and Au
32. Iron is galvanized when it is dipped in
(1) Molten Zinc (2) Molten Copper
(3) Molten Carbon (4) Molten Gold.
33. A homogenous mixture of two or more metals is
(1) Alloy (2) Allotrope
(3) Isotope (4) Isobars
34. Magnalium is an alloy of
(1) Al and Cu (2) Mg and Al
(3) Zn and Al (4) Cu and Zn.
35. Which metal oxide is acidic in nature?
(1) Cu (2) Ce (3) Cr (4) Se
36. Stainless steel is an alloy of
(1) Fe, Cr, C, Ni (2) Fe, Ni, Cr
(3) Cu, Al (4) Fe, Al, Ni
37. Chemical used for making photographic film is
(1) Sodium chloride (2) Silver bromide
(3) Potassium iodide (4) Copper chloride.
38. A non-metal which is stored in water is
(1) Pb (2) Al (3) Cu (4) P
39. $P_4 + 6Cl_2 \rightarrow$
(1) $2P_2Cl_6$ (2) $4PCl_3$ (3) PCl_6 (4) P_2Cl_5
40. Mercury is used in thermometer because _____.
(1) It does not wet the glass
(2) It expands on heating
(3) It's a liquid
(4) All of these
41. The non-metal capable of gaining as well as losing an electron is
(1) Hg (2) Ca (3) C (4) H
42. A nonmetal used to treat rubber in the process of vulcanization is
(1) Sulphur (2) Phosphorous
(3) Carbon (4) Chlorine
43. Metal which reacts vigorously with HCl to produce salt and hydrogen is
(1) Sodium (2) Zinc
(3) Tin (4) Lead
44. In the periodic table all the non-metals are
(1) s-block (2) p-block (3) d-block (4) f-block
45. A crucible used in lab to melt metal is made of
(1) Sulphur (2) Silicon
(3) Graphite (4) Phosphorous
46. Phosphorous combine with oxygen to form types of oxide
(1) Three (2) Two (3) One (4) Four
47. The oxide of non-metal which is neutral is
(1) SO_3 (2) NO_2 (3) CO (4) P_2O_3
48. _____ dissolves in water to produce carbonic acid
(1) CO (2) C (3) CO_2 (4) $2C$
49. An element used in computers, T.V. etc. due to its semiconductor properties is
(1) Nitrogen (2) Silicon
(3) Bromine (4) Carbon
50. In the native state metal, is present
(1) As a mixture with a metal.
(2) In pure/elemental form
(3) As a mixture with non-metal
(4) As a mixture with a compound.
51. Aluminium is extracted from bauxite which is an _____.
(1) Oxide ore (2) Carbonate ore
(3) Halide ore (4) Sulphide ore.
52. The formula of magnetite is
(1) Fe_2O_3 (2) Fe_3O_4
(3) Cu_2O (4) CuS
53. Long form of the periodic table was proposed by
(1) Henry Moseley (2) Rang and Warner
(3) Newland (4) Mendeleef
54. Which of the following is a carbonate ore of copper?
(1) Cuprite (2) Pyrite
(3) Copper glance (4) Malachite
55. Acid which can react even with non-metal is
(1) dil. HCl (2) con HCl
(3) dil H_2SO_4 (4) con HNO_3
56. The chemical formula for cryolite is
(1) Al_2O_3 (2) Na_3AlF_6
(3) $Al(OH)_3$ (4) $NaAlO_2$
57. How many of the following configurations represent purely metallic elements? **(HBBV, 2014)**
2, 8, 7 2, 8, 1 2, 8, 4 2, 8, 3
(1) 1 (2) 2 (3) 3 (4) 4
58. Which of the following information about the reaction of CaO with water is not true? **(HBBV, 2014)**
(1) CaO reacts with water vigorously
(2) During the reaction the test tube becomes hot
(3) CaO reacts with water to form slaked lime
(4) During the reaction test tube becomes cold
59. Cranes have metallic rope-wires for lifting load because metals _____. **(HBBV, 2013)**
(1) are hard (2) are malleable
(3) are ductile (4) have tensile strength
60. When Cu reacts with concentrated H_2SO_4 , which of the following statements "does not hold true"?
(1) Sulphur dioxide is produced **(HBBV, 2012)**
(2) Copper sulphate is formed
(3) One of the by products is water
(4) Oxygen is evolved

61. What is the colour of Methane flame? (HBBV, 2012)
 (1) Blue (2) Yellow (3) Red (4) Green
62. An element X combines with another element Y to form a compound XY(3) Select the correct option for the above reaction. (HBBV, 2011)
 (1) X contains three electrons in its outermost orbit
 (2) Y is a metal
 (3) X gains three electrons during formation of a compound
 (4) Y loses three electrons during formation of a compound.
63. What will happen when Calcium oxide is dissolved in water? (HBBV, 2011)
 a. Reaction will be endothermic
 b. It will give out Oxygen bubbles
 c. Reaction will be exothermic
 d. It will give out Hydrogen
 (1) a and b (2) only c
 (3) b and c (4) only d
64. Which of the following water body will have most saline water? (HBBV, 2011)
 (1) Estuary
 (2) Polar ocean
 (3) Equatorial ocean
 (4) Spring water from mountain peaks
65. Select the correct set up for laboratory preparation of Carbon dioxide. (HBBV, 2011)



Application Based Questions

66. $\text{FeO} + \text{C} \rightarrow \text{Fe} + \text{CO}$
 $\text{ZnO} + \text{C} \rightarrow \text{Zn} + \text{CO}$
 In the above reactions
 (1) Carbon is reduced
 (2) Carbon monoxide is oxidized
 (3) Metal oxide is reduced
 (4) Metals oxide is oxidized
67. A, B, C are 3 elements. Correct order of their reactivity is
 $\text{A}_2\text{O}_3 + 2\text{B} \rightarrow \text{B}_2\text{O}_3 + 2\text{A}$
 $3\text{CSO}_4 + 2\text{B} \rightarrow \text{B}_2(\text{SO}_4)_3 + 3\text{C}$
 $3\text{CO} + 2\text{A} \rightarrow \text{A}_2\text{O}_3 + 3\text{C}$
 (1) $\text{A} < \text{B} < \text{C}$ (2) $\text{B} > \text{A} > \text{C}$
 (3) $\text{B} < \text{A} < \text{C}$ (4) $\text{A} > \text{B} > \text{C}$
68. Phosphate of a metal shows formula M_3PO_4) Find formula for its silicate
 (1) MSiO_3 (2) M_2SiO_3
 (3) $\text{M}_2(\text{SiO}_3)$ (4) None of these
69. Metal which does not react with dil. HCl is and metal which remains passive with cone HNO_3 is _____
 (1) Mg, Al (2) Cu, Al
 (3) Na, Ag (4) Fe, Ag
70. Water boilers are made of copper because
 (1) They are very strong
 (2) They are light
 (3) They are cost-effective
 (4) They are good conductor of heat.

ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10
Ans.	1	2	1	2	1	4	3	1	1	2
Ques.	11	12	13	14	15	16	17	18	19	20
Ans.	1	4	2	4	1	1	4	4	2	4
Ques.	21	22	23	24	25	26	27	28	29	30
Ans.	1	2	2	1	3	1	2	1	2	3
Ques.	31	32	33	34	35	36	37	38	39	40
Ans.	1	1	1	2	3	1	2	4	2	4
Ques.	41	42	43	44	45	46	47	48	49	50
Ans.	4	1	1	2	2	2	3	3	2	3
Ques.	51	52	53	54	55	56	57	58	59	60
Ans.	1	2	1	4	1	2	2	4	4	2
Ques.	61	62	63	64	65	66	67	68	69	70
Ans.	1	1	2	1	4	3	2	2	2	4

8. CARBON AND ITS COMPOUNDS

1. L.P.G.mainly contain:

 - (1) Coal tar (2) Iso butane
 - (3) Coal gas (4) Methane

2. Which of the following is a renewable source of energy ?

 - (1) Coal (2) Petrol (3) CNG (4) Biogas

3. Which of the following is a renewable source of energy?

 - (1) L.P.G (2) C.N.G
 - (3) Kerosene (4) Sewage gas

4. C.N.G. stands for

 - (1) Central natural gas
 - (2) Compressed natural gas
 - (3) Combined natural gas
 - (4) Cold natural gas

5. Which of the following is not renewable source of energy?

 - (1) Water (2) Wind (3) Biogas (4) Peat

6. Out of three Petroleum fractions X, Y, Z with boiling points 80, 140, 105°C. Which one will be distilled out at the top of the distillation tower ?

 - (1) Z (2)Y (3) X & Z (4) X

7. Natural gas occurs

 - (1) Above the petroleum oil
 - (2) Below the petroleum oil
 - (3)Along with petroleum oil
 - (4) None of these

8. Petroleum is a mixture of

 - (1) Solid hydrocarbon (2) Liquid hydrocarbon
 - (3) Gaseous hydrocarbon (4) All of these.

9. Which of the following is not a fossil fuel?

 - (1) Marsh gas (2) Petrol
 - (3) Diesel (4) Kerosene

10. Which of the following is used as a fuel?

 - (1)Gasoline (2) Ether
 - (3) Coaltar (4) Slag

11. When an oil well is drilled through rocks _____ comes out first .

 - (1) Coal gas (2) Marsh gas
 - (3) Wax (4) None of these

12. Coal is formed by process of_____ .

 - (1) Carbonization (2) Distillation
 - (3) Vaporization (4) Evaporation

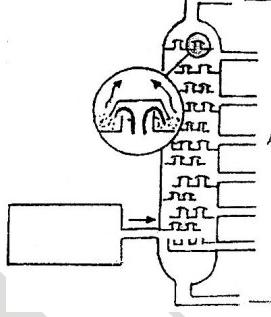
13. Coal $\xrightarrow{\text{destructive distillation}}$ _____ + Coal gas

 - (1) Coal tar (2) Coke
 - (3) Charcoal (4) CO_2

14. A type of coal which has highest percentage of carbon.

 - (1) Anthracite (2) Bituminous
 - (3) Peat (4) Lignite

15. Which fuel is obtained at (A) ?



(1) Petrol (2) Diesel

(3) Petroleum gas (4) Water gas

16. A family requires 30 kg Kerosene per month (30 days). If calorific value of Kerosene is 48 KJ /gm how much is per day average consumption?

 - (1) 24000 KJ (2) 240 KJ
 - (3) 2(4)7 KJ (4) 27000 KJ

17. Coal gas is a mixture of_____ .

 - (1) $\text{CH}_4 + \text{H}_2 + \text{CO}_2$ (2) $\text{C}_9\text{HO} + \text{H}_2$
 - (3) $\text{CHO} + \text{H}_2\text{O}$ (4) $\text{C}_2\text{H}_6 + \text{H}_2 + \text{O}_2$

18. The composition of water gas is _____. .

 - (1) $\text{CO} + \text{O}_2$ (2) $\text{CO} + \text{H}_2$
 - (3) $\text{CO}_2 + \text{H}_2$ (4) $\text{O}_2 + \text{H}_2 + \text{C}$

19. The composition of producer gas is

 - (1) $\text{CO} + \text{N}_2$ (2) $\text{CO} + \text{H}_2$
 - (3) $\text{CO} + \text{CH}_4$ (4) $\text{CO} + \text{NO}_2$

20. Which of the following has highest calorific value?

 - (1) Petrol (2) Coke
 - (3) Natural gas (4) Kerosene

21. Natural gas mainly consist of _____

 - (1) C_2H_6 (2) CH_4
 - (3) C_3H_8 (4) C_4H_{10}

22. The heat produced by burning 1 gm of fuel completely is known as _____. .

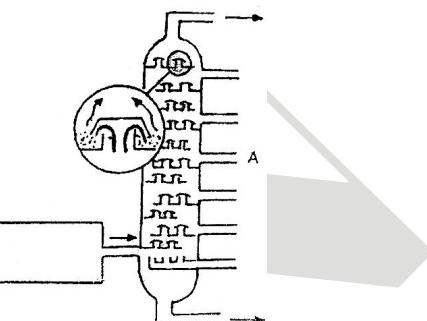
 - (1) Heat capacity (2) Calorific value
 - (3) Vapour density (4) Boiling point

23. Combustion is a reaction accompanied by heat and light

 - (1) Reduction (2) Redox
 - (3) Substitution (4) Oxidation

24. Types of combustion are

 - (1) Rapid (2) Rapid, Slow
 - (3) Explosive (4) Spontaneous



49. Destructive distillation of wood does not give _____.
(1) Wood tar (2) Wood charcoal
(3) CO (4) CO_2
50. In diamond, the C-atoms are arranged in _____.
(1) Octahedral (2) Tetrahedral
(3) Planer (4) Trigonal
51. In diamond, each C-atom is joined to _____ carbon atoms.
(1) Two (2) Four
(3) One (4) Three
52. The number of free electron in each carbon atom of graphite are is
(1) Two (2) Four
(3) One (4) None
53. In graphite, the C-atom is arranged in _____.
(1) Tetrahedral
(2) Octahedral
(3) Hexagonal planar rings
(4) None of these
54. _____ is used as dry lubricant.
(1) Diamond (2) Coke
(3) Charcoal (4) Graphite
55. Diamond is soluble in _____.
(1) Alcohol (2) Petrol
(3) Water (4) None of these
56. $\text{C}_{12}\text{H}_{22}\text{O}_{11} \rightarrow 12\text{C} + 11\text{H}_2\text{O}$ the carbon obtained in the reaction is:
(1) Animal charcoal (2) Sugar charcoal
(3) Coke (4) Wood charcoal
57. _____ is used for making printer ink, shoe polish
(1) Graphite (2) Coke
(3) Lampblack (4) Coal
58. Destructive distillation of wood gives _____.
(1) Coal tar (2) Wood charcoal
(3) Coal gas (4) CO_2
59. Due to its absorbing property is used to remove bacteria from drinking water _____.
(1) Graphite (2) Coke
(3) Lampblack (4) Activated chart
60. Coal, on destructive distillation gives _____.
(1) Charcoal (2) Coke
(3) C-black (4) Animal charcoal
61. Formula for propyne is _____.
(1) C_2H_2 (2) C_2H_4
(3) C_3H_4 (4) C_3H_6
62. Fullerenes is a cluster of atom held in a cage like structure.
_____.
(1) Carbon (2) Silicon
(3) Oxygen (4) Hydrogen
63. _____ is used for cutting and grinding tools :
(1) Diamond (2) Graphite
(3) Coke (4) Coal
64. CO_2 dissolved rapidly in water if:
(1) Temperature is increased
(2) Pressure is increased
(3) Both of 1 and 2
(4) None of these
65. $\text{CH}_3\text{COONa} + \text{NaOH} \xrightarrow{\text{cao}} \text{Na}_2\text{CO}_3 + ?$
(1) CH_4 (2) CO_2 (3) C_3H_6 (4) C_4H_{10}
66. The dehydration of oxalic acid by con. H_2SO_4 , gives mixture of
(1) $\text{CO} + \text{H}_2$ (2) $\text{CO} + \text{CO}_2$
(3) $\text{CO}_2 + \text{H}_2$ (4) $\text{CH}_4 + \text{H}_2$
67. Test for CO is _____.
(1) It turns lime water milky
(2) It turns redd litmus blue
(3) It burns with blue flame
(4) None of these
68. Wood charcoal is used in gas masks because
(1) It has low ignition temperature
(2) It is a reducing agent
(3) It absorbs harmful gases
(4) It is a bad conductor of heat
69. Methane gas is collected by downward displacement of water because
(1) Methane is lighter than air
(2) Methane is insoluble in water
(3) Both 1 and 2
(4) None of these
70. Destructive distillation of wood is heating of wood
(1) in the absence of air
(2) in excess of air
(3) in limited supply of air
(4) none of these.
71. Wood charcoal is an excellent fuel because
(1) Its ignition temperature is low
(2) It burns without smoke
(3) It has absorbing property
(4) Both 1 and 2
72. Diamond shines due to its
(1) High density (2) High refractive index
(3) High melting point (4) None of these

Application Based Questions

79. Petroleum is refined by
(1) Fractional distillation (2) Destructive distillation
(3) Distillation (4) All of these

80. A family requires 1(4)5 kg LPG per month (30 days). If calorific value of LPG is 55 KJ /gm how much is per month consumption?
(1) 8785000 KJ (2) 279991 KJ
(3) 79050 KJ (4) 797500 KJ

81. In soda-acid fire extinguisher $2\text{NaHCO}_3 + \text{H}_2\text{SO}_4$ gives _____.
(1) $\text{Na}_2\text{SO}_4 + 2\text{H}_2\text{O} + 2\text{CO}_2$
(2) $\text{Na}_2\text{SO}_4 + \text{CO}_2 + \text{O}_2$
(3) $\text{Na}_2\text{SO}_4 + \text{H}_2\text{O} + \text{O}_2$
(4) $\text{Na}_2\text{SO}_4 + \text{H}_2\text{O}_2$

82. $\text{CH}_4 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O} + 384 \text{ KJ}$ Find calorific value of Methane.
(1) 24 KJ/gm (2) 38.5 KJ/gm
(3) 12 KJ/gm (4) None of these

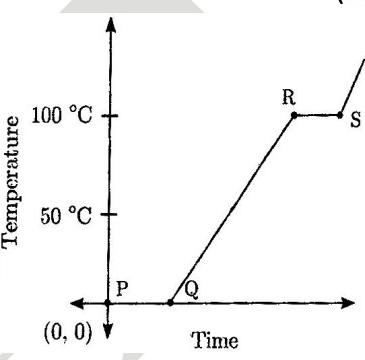
83. The carbon obtained by destructive distillation of sugar is: _____.
(1) Sugar charcoal (2) Animal charcoal
(3) Coke (3) Wood charcoal

ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10
Ans.	2	4	4	2	4	4	1	4	1	1
Ques.	11	12	13	14	15	16	17	18	19	20
Ans.	4	1	1	1	2	1	1	2	1	1
Ques.	21	22	23	24	25	26	27	28	29	30
Ans.	2	2	4	2	3	2	2	2	4	4
Ques.	31	32	33	34	35	36	37	38	39	40
Ans.	4	2	1	2	1	2	1	4	2	2
Ques.	41	42	43	44	45	46	47	48	49	50
Ans.	1	2	2	2	3	4	3	1	4	2
Ques.	51	52	53	54	55	56	57	58	59	60
Ans.	2	3	3	4	4	2	3	2	4	2
Ques.	61	62	63	64	65	66	67	68	69	70
Ans.	3	1	1	2	1	2	3	3	3	1
Ques.	71	72	73	74	75	76	77	78	79	80
Ans.	4	2	3	1	1	3	1	2	1	4
Ques.	81	82	83							
Ans.	1	1	1							

9. SUBSTANCES IN COMMON USE

1. When copper is treated with dilute nitric acid we get _____ gas.
(1) NO_2 (2) NO (3) N_2O (4) N_2O_5
2. When copper is treated with conc. nitric acid we get _____ gas.
(1) NO_2 (2) NO (3) N_2O (4) N_2O_5
3. Which one of the following metal then treated with hot conc. sulfuric acid liberates SO_2 gas?
(1) Ag (2) Cu (3) Al (4) All
4. (a) $\text{Ag}_2\text{S} + 4 \text{NaCN} \rightarrow 2\text{Na}[\text{Ag}(\text{CN})_2] + \text{Na}_2\text{S}$
(b) $2\text{Na}[\text{Ag}(\text{CN})_2] + \text{Zn} \rightarrow 2\text{NaCN} + \text{Zn}(\text{CN})_2 + 2\text{Ag}$
with respect to above reactions which one of the statements is incorrect?
(1) Reaction (a) is double decomposition reaction
(2) Reaction (b) is displacement reaction
(3) Zinc is less reactive than Ag.
(4) Ag is less reactive than Zinc.
5. Yellow phosphorus gives cold flame because
(1) Yellow phosphorus is soluble in CS_2
(2) Ignition temperature of Yellow phosphorus is 30°C
(3) In Yellow phosphorus atoms are joined by weak bonds
(4) None of these
6. Which of the following statements are incorrect?
i) Graphite can be converted to diamond
ii) diamond can be converted to Graphite
iii) Using iodine as a catalyst Yellow phosphorus can be converted to red phosphorus
iv) Alpha sulphur is stable below $9(2)4^\circ\text{C}$
v) At higher temperature beta sulphur gets converted to alpha sulphur.
(1) ii & v are wrong (2) ii & iii are wrong
(3) iii & iv are wrong (4) None of these
7. What will happen when chlorine gas is passed through hot NaOH solution?
(1) Sodium chlorate (2) Sodium hypochlorite
(3) Sodium chloride (4) None of these
8. Which one of the following is test to detect halide?
(1) $\text{NaCl} + \text{AgNO}_3 \rightarrow \text{NaNO}_3 + \text{AgCl} \downarrow$
(2) $\text{CuSO}_4 + \text{Ba}(\text{NO}_3)_2 \rightarrow \text{BaSO}_4 + \text{Cu}(\text{NO}_3)_2$
(3) $\text{KCl} + \text{I}_2 \rightarrow \text{KI} + \text{Cl}_2$
(4) None of these
9. The number of atoms present in a molecule of an element is known as
(1) Allotropy (2) Isomerism
(3) Electrolysis (4) Atomicity
10. Crystals which are referred as hydrated crystals are the:
(1) Salts which are insoluble in water
(2) Salts which do not contain water
(3) Salts which contain water of crystallization
(4) Salts which are soluble in water
11. Crystalline nature of crystals is lost on:
(1) Shaking (2) Cooling
(3) Boiling (4) Heating
12. Mixture of sulphur and turmeric powder can be separated by
(1) Filtering (2) Cooling
(3) Freezing (4) Boiling
13. In fractional distillation of petroleum, the liquid with the highest boiling point condenses in
(1) Top most tray (2) Middle tray
(3) Lower tray (4) Any tray
14. Mixture of diesel and water can be separated by
(1) Filtration (2) Using separating funnel
(3) Sublimation (4) Crystallisation
15. Two miscible liquids can be separated by distillation when there is a large difference in their
(1) Melting point (2) Boiling point
(3) Volatilination (4) Freezing point
16. In fractional distillation of petroleum, LPG is collected.
(1) at 170°C (2) 250°C
(3) above 400°C (4) Below 40°C
17. In fractional distillation of petroleum, the fraction collected between 40° – 170°C is
(1) Lubricating oil (2) Kerosene
(3) Petrol (4) Fuel oil
18. The foul substance added to detect leakage of LPG is
(1) Alcohol (2) Ethane
(3) Ethyl mercaptan (4) Acetone
19. Chemical formula for rust is
(1) $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$ (2) $\text{Fe}_2\text{O}_3, x\text{H}_2\text{O}$
(3) $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ (4) $\text{FeSO}_4, 2\text{H}_2\text{O}$
20. $\text{AgNO}_3 + \text{KCl} \rightarrow \text{AgCl} + \text{KNO}_3$, is an example of
(1) Endothermic reaction
(2) Displacement reaction
(3) Double displacement
(4) Combination reaction
21. Reddish brown coloured precipitate is
(1) Copper hydroxide (2) Boric hydroxide
(3) Cadmium sulphide (4) None of these
22. $\text{Cu}(\text{NO}_3)_2 \rightarrow \text{CuO} + \text{X} + \text{Y}$. X, Y represent
(1) N_2, O_3 (2) NO_2, O_2
(3) NO, NO_2 (4) None of these
23. $\text{Pb}(\text{NO}_3)_2 + 2\text{KI} \rightarrow \text{PbI}_2 + 2\text{KNO}_3$. The colour of the precipitate formed.
(1) White
(2) Golden Yellow
(3) Red
(4) Orange

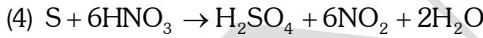
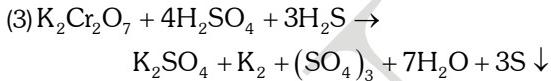
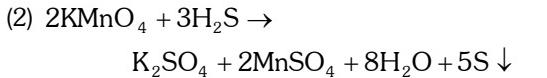
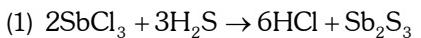
24. In the reaction $Mg + CuSO_4 \rightarrow MgSO_4 + Cu$, Mg undergoes
 (1) Reduction
 (2) Oxidation
 (3) Oxidation as well as reduction
 (4) Neither oxidation nor reduction
25. _____ is used in tooth paste.
 (1) $ZnSO_4 \cdot 7H_2O$ (2) $FeSO_4$
 (3) $MgCO_3$ (4) Al_2O_3
26. In the reaction, $H_2S + SO_2 \rightarrow 2H_2O + 3S$, the substance that is oxidised is
 (1) H_2S (2) SO_2 (3) S (4) H_2O
27. Formation of SO_3 from SO_2 and O_2 is a reaction _____.
 (1) Combination (2) Decomposition
 (3) Displacement (4) Redox
28. _____ is an example of photochemical reaction.
 (1) Calcinations (2) Neutralization
 (3) Photosynthesis (4) Rusting
29. Sodium can be stored in kerosene, because
 I) Sodium gets oxidised easily (HBBV, 2014)
 II) Sodium is highly reactive with water
 III) Kerosene is an inert hydrocarbon
 IV) Density of Sodium is higher than kerosene
 1 I and II (2) I, II and III
 (3) III and IV (4) I, II, III and IV
30. Observe the following graph of an experiment of conversion of ice into water and water into ice. Select false statement in case of these observations?
 (HBBV, 2014)
- 
- (1) Temperature remains steady during change of state
 (2) Process of boiling takes more time than melting
 (3) Ice will start floating on water at point Q
 (4) Dimensions of graph will vary according to pressure conditions
31. Select a group of elements showing same atomicity.
 (1) Phosphorus, Sulphur, Carbon (HBBV, 2014)
 (2) Oxygen, Helium, Hydrogen
 (3) Helium, Argon, Chlorine
 (4) Oxygen, Nitrogen, Chlorine
32. Which of the following elements are present in cellulose?
 (1) Carbon, Hydrogen, Oxygen (HBBV, 2014)
 (2) Hydrogen, Oxygen, Nitrogen
 (3) Carbon, Nitrogen, Oxygen
 (4) Carbon, Hydrogen, Iron
33. What is the similarity in Sodium bicarbonate and Sodium carbonate?
 (1) Number of atoms (2) Molecular formula
 (3) Structural formula (4) Physical properties
34. When concentrated sulphuric acid is slowly poured on sugar, sugar turns into black spongy mass. What is the role of sulphuric acid in this process?
 (HBBV, 2014)
- (1) A reducing agent (2) A dehydrating agent.
 (3) An Oxidizing agent (4) A catalyst
35. Which of the following radicals is monovalent?
 (1) Chlorate (2) Oxide (HBBV, 2014)
 (3) Sulphite (4) Sulphate
36. In wafer packets Nitrogen is used to keep waters crisp because
 (1) it is major component of air
 (2) it is non-reactive.
 (3) it absorbs moisture
 (4) it acts as antifungal agent
37. When Copper sulphate crystals are heated in a dry test tube, some water droplets are observed in the test tube. This water is
 (1) atmospheric moisture
 (2) water or hydration
 (3) water of crystallisation
 (4) water of sublimation
38. Which of the following represents cane-sugar (sucrose)?
 (HBBV, 2013)
- (1) $C_6H_{12}O_6$ (2) $C_6H_{12}O_3$
 (3) $C_{12}H_{22}O_{11}$ (4) $C_6H_{22}O_6$
39. Select the incorrect option for O_2 and CO_2 :
 (1) Both are colourless and odourless gases
 (2) CO_2 is collected by upward displacement of air in laboratory preparation (HBBV, 2013)
 (3) O_2 is freely soluble in water
 (4) O_2 is collected by downward displacement of water in laboratory preparation
40. Choose the odd one out on the basis of type of mixture.
 (HBBV, 2012)
- (1) Calamine solution (2) Milk
 (3) Hair spray (4) Smoke
41. What is oil of vitriol?
 (1) Aqua regia (2) H_2SO_4
 (3) HNO_3 (4) HCl

42. What is wood made of _____? (HBBV, 2012)
 a. Humus b. Cellulose c. Lignin
 (1) a and b (2) a, b and c
 (3) a and c (4) b and c
43. Glass is a _____. (HBBV, 2012)
 (1) compound (2) mixture
 (3) solid (4) 2 and 3 both
44. How many atoms are there in the following compound?
 $K_2SO_4 \cdot Al_2(SO_4)_3 \cdot 24H_2O$ (HBBV, 2011)
 (1) 34 (2) 96 (3) 42 (3) 45

Application Based Questions

45. Yellow phosphorus is more reactive than red phosphorus because
 (1) Red phosphorus is crystal lattice structure
 (2) In Yellow phosphorus atoms are joined by weak bonds
 (3) Yellow phosphorus is soluble in CS_2
 (4) Ignition temperature of Yellow phosphorus is 300°C

46. Which one of the above reactions is oxidation reaction?



47. $H_2S + Cl_2 \rightarrow HCl + S$, in the reaction, the substance that is oxidised is
 (1) Sulphur (2) Hydrogen
 (3) H_2S (4) Chlorine
48. $H_2S + Cl_2 \rightarrow 2 HCl + S$, the reducing agent is
 (1) Cl_2 (2) S (3) H_2S (4) HI
49. Cl_2 gas when passed through lime water, it becomes milky due to formation of _____.
 (1) Bleaching powder (2) Smelling salt
 (3) Epsom salt (4) Baking powder

ANSWER KEY

Ques	1	2	3	4	5	6	7	8	9	10
Ans.	2	1	4	3	4	1	1	1	4	3
Ques	11	12	13	14	15	16	17	18	19	20
Ans.	4	1	3	2	2	4	3	3	2	3
Ques	21	22	23	24	25	26	27	28	29	30
Ans.	4	2	2	2	3	1	1	3	4	3
Ques	31	32	33	34	35	36	37	38	39	40
Ans.	4	1	1	2	1	2	3	3	3	1
Ques	41	42	43	44	45	46	47	48	49	
Ans.	2	4	2	2	2	4	3	3	1	